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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/739,087 | 12/16/2000 | Furqan Zafar Shaikh | 200-0550 | 3248 |

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EXAMINER

FLETCHER III, WILLIAM P

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1762

DATE MAILED: 03/25/2003

21

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action

Application No.

09/739,087

Applicant(s)

SHAIKH ET AL.

Examiner

William Phillip Fletcher III

Art Unit

1762

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 30 January 2003 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.
- b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☒ The proposed amendment(s) will not be entered because:
- (a) ☒ they raise new issues that would require further consideration and/or search (see NOTE below);
- (b) ☐ they raise the issue of new matter (see Note below);
- (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
- (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: see attached.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☒ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: see attached.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☒ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____.

Claim(s) objected to: _____.

Claim(s) rejected: 1-4, 6, 7 and 20-23.

Claim(s) withdrawn from consideration: _____.

8. ☒ The proposed drawing correction filed on 07 August 2002 is a) ☒ approved or b) ☐ disapproved by the Examiner.
9. ☐ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____.
10. ☐ Other: _____.

Detailed Advisory Action

The examiner prepares this advisory action in reply to applicant's response after-final,
5 timely filed 30 January 2003, made of record in this file as Paper No. 9. The proposed
amendment therein will not be entered because it raises new issues that would require further
consideration and/or search. Claim 1, if amended as proposed, would recite "...lining a plurality
of two or more cylinder bores...". This amendment would significantly change the scope of the
claim which originally read "...lining a cylinder bore...". No claim of a scope requiring two or
10 more cylinder bores has hitherto been considered. Similarly for new claim 24. Additionally,
proposed new claim 24 recites "...a blend gradient of copper and a wear material...". As noted
in Paper No. 8, the originally-filed application lacks literal support for this limitation (see
below).

The examiner fully considered applicant's arguments in Paper No. 9; they are not
15 persuasive.

Applicant traversed the rejection of claims 20, 21, and 23 under 35 U.S.C. § 112, 1st
Paragraph set-forth in Paper No. 8. The subject matter of these claims concerns an embodiment
in which the cylinder bore is coated with a graded layer of material. After careful review of the
originally-filed disclosure, the examiner identified p. 13, ll. 16-24 of the specification as
20 disclosing this embodiment:

To enhance coating effectiveness as a continuous coherent and well-bonded,
wear-resistant coating, the particles of copper and wear liner material may be
blended as a transient gradient between the thermal management layer of copper
and the wear resistant layer of wear resistant material. If the wear resistant

material is tool steel, smaller steel particles (less than 5 microns) net more readily with the larger copper particles (10 – 45 microns) to avoid any possible inter-splat boundaries to enhance the integrity of the coating.

5 Claim 20 recites coating “a first material” and “a second material.” The passage above supports only copper as a first material and a wear resistant material as a second material. The originally-filed disclosure does not support *any and all* materials in this embodiment. Possession of a species does not, necessarily, indicate possession of a genus. In other words, the originally-filed disclosure only supports a graded layer of copper *only* and a wear resistant material *only, not any*
10 and all possible first materials and second materials. None of the portions of the originally-filed disclosure, cited by applicant, provide literal support for the limitations in question. Consequently, this argument is not persuasive.

Applicant traversed the rejection of claim 1 under 35 U.S.C. § 103(a) set-forth in Paper No. 8. Applicant contends that the gas-dynamic cold spraying apparatus of Alkhimov would not
15 fit within a cylinder of 3.5 to 4.5 inches diameter, which is typical of most automotive vehicle engines.

Applicant provided a declaration by one of the inventors to this effect. The declaration is not persuasive in light of the other exhibits provided by applicant. Specifically, applicant’s Exhibit 2 states that a circular gas-dynamic cold spray nozzle has an exit diameter of 5 mm (0.2
20 in) and a rectangular nozzle has an exit geometry of 2 mm (0.08 in) x 10 mm (0.4 in). All of these dimensions are significantly smaller than the range of 3.5 to 4.5 inches and would, therefore, appear to comfortably fit inside a cylinder bore. The overall length of the nozzle and the lateral feeder mechanism, dimensions of which are not specified, would not appear to effect the diameter of the nozzle. Further, the size of other portions of the apparatus, apart from the

nozzle, would not appear to effect whether or not the *nozzle* may be inserted, which is really what's important since the nozzle is the only portion of the apparatus that needs to be inserted into the cylinder bore. As to the photographs of the gas-dynamic cold spray apparatus in the Exhibits, no specific dimensions are given and the nozzles are not shown in relation to a cylinder bore. It is impossible to conclude from these photos that "the nozzle unit is of such a size that it cannot be fitted within a cylinder of a conventional automotive engine." Consequently, while Dr. Pan's declaration states that he was unable to find a gas-dynamic cold spray mechanism which can be inserted into a 3.5 to 4.5 inches diameter cylinder, applicant's exhibits suggest otherwise.

As to applicant's argument that rotation of the cylinders (and engine block) is physically impossible with the insertion of two or more spray guns, the examiner points out that a limitation reciting two or more cylinders is only in the claims amended as proposed. Consequently, this argument is not commensurate in scope with the claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Phillip Fletcher III whose telephone number is (703) 308-7956. The examiner can normally be reached on Monday through Friday, 9 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

William Phillip Fletcher III
Patent Examiner
United States Patent & Trademark Office
Group Art Unit 1762

wpf

March 24, 2003



SHRIVE P. BECK
SUPERVISORY PATENT EXAMINER
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